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Airborne Electronic Attack Analysis of Alternatives (AEA AoA)

I. STUDY PURPOSE

The AEA AoA's purpose was to provide cost effectiveness information to the Department of Defense (DoD) in support of its process of examining potential new acquisition programs to initially augment and eventually replace the EA-6B force beginning in 2010. The analysis focused on Airborne Electronic Attack (AEA) capability for the collective air superiority needs of the Services in suppression of enemy air defenses during the 2010-2030 timeframe. The study schedule was designed to allow the results be used in the FY 04 POM deliberations and beyond.

II. STUDY RESULTS SUMMARY

- A. The study team concluded that a complete and comprehensive AEA capability will continue to be needed as part of a dominating United States air superiority capability. AEA and other survivability approaches, such as air vehicle electronic self-protection, physical threat destruction, low observable technology, and information operations, are individually and collectively most effective when employed in a balanced manner. The study team did not discover any individual or mix of transformational technologies, systems, or military concepts of operations that would warrant the elimination of a complete and comprehensive AEA capability from the current United States Air Superiority arsenal.
- B. The study determined that two components are required to provide a complete and comprehensive AEA solution:
 - A recoverable platform or combination of platforms serving as the core component operating in enemy airspace. The core component provides the AEA detection and battle management capabilities for reactive jamming; and
 - An expendable air platform serving as the stand-in component. This component provides critical capabilities against certain advanced threat emitters and is employed in threat environments not accessible to the core component.
- C. Twenty-seven air vehicle and air vehicle combinations were identified as core component candidates. Further narrowing the list requires OSD and Service policy decisions that were not provided to the study team.
- D. The study grouped these candidate alternatives into five force option categories for consideration:
 - Single Platform* - Land Based Only
 - Single Platform* - Land and Aircraft Carrier Capable
 - Combination* - Fighter Land Based & Aircraft Carrier Capable
 - Combination* - Large Land Based & Aircraft Carrier Capable
 - Combination* - Two Land Based & Single Aircraft Carrier Capable
- E. Total Ownership Cost (TOC) information of the core and stand-in component alternatives was developed to normalize cost estimate comparisons. This cost information was developed only for comparative purposes between options within this analysis and not for direct application to programming or budgetary activities. Each alternative TOC was calculated for an AEA force size and structure that provided an equivalent AEA force capability. These assumptions were

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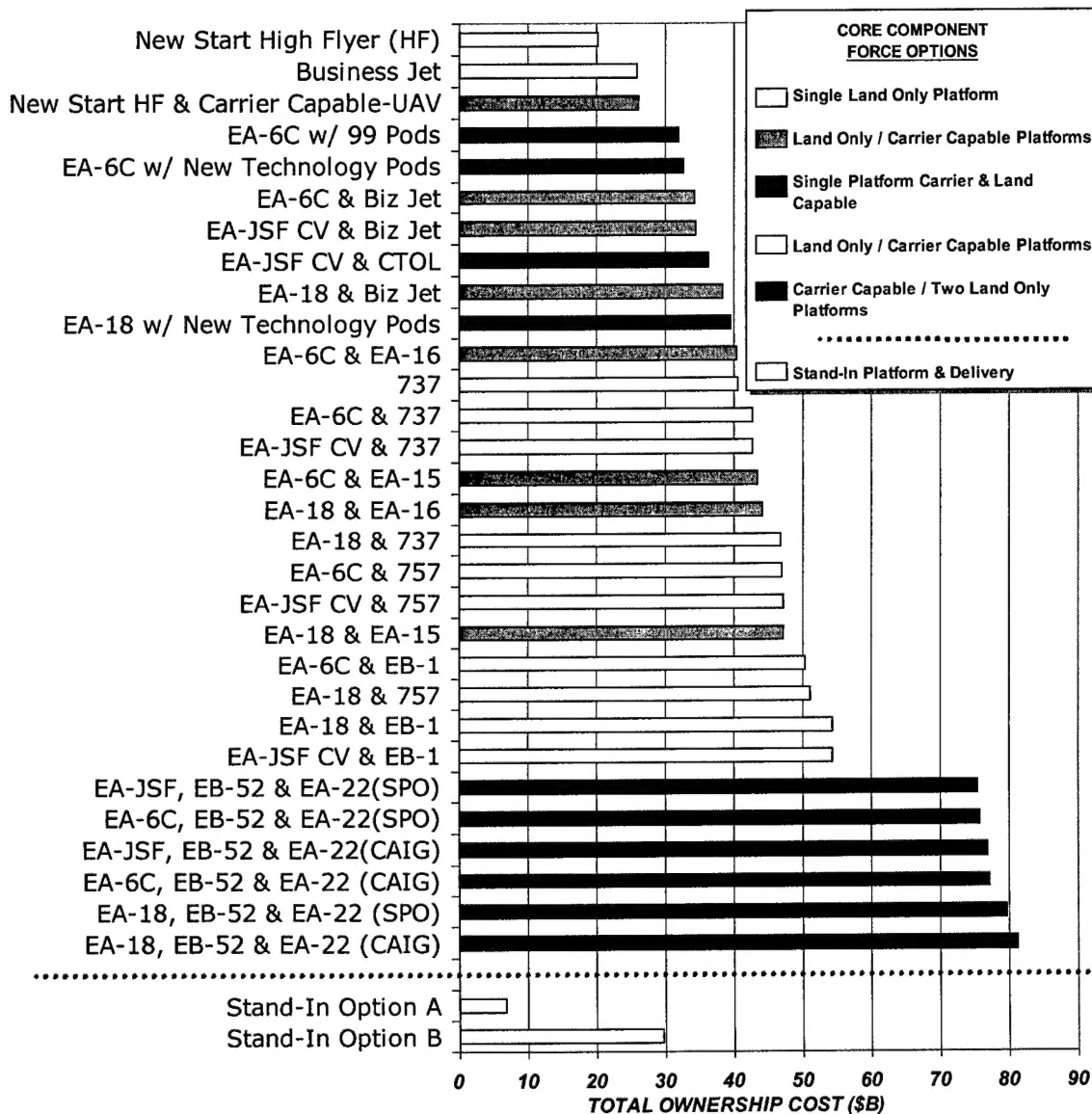
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not necessarily representative of how the Services may opt to organize AEA forces. Excursions showed changes in force size and/or organization do not significantly change relative TOC rankings.

- F. Figure-1 provides a top-level summary of the AEA AoA findings; showing information on core and stand-in component alternatives. The details of the study findings are contained in the 2000+ pages of the ten classified volumes of the AEA AoA report.



AEA Alternatives Shown Here Have Comparable Effectiveness With Tailored Mission Planning
All Cases Assume IOC: 2010. Potential Cost Growth Estimate Not Shown

**Figure-1 Total Ownership Cost Comparison for Force Options
with Equivalent AEA Effectiveness**

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III. STUDY MOTIVATION

- A. The need for action results from the decreasing EA-6B inventory primarily, due to issues associated with sustaining the aging EA-6B force. The current inventory is projected to be insufficient to meet DoD needs beyond 2009 (Figure-2).
- B. Operation Allied Force not only reinforced the requirement for AEA and the need for a greater capability, but also highlighted the inadequacy of the existing Low Density/High Demand inventory size. The current EA-6B operational tempo associated with Enduring Freedom is expected to further aggravate the inventory situation.

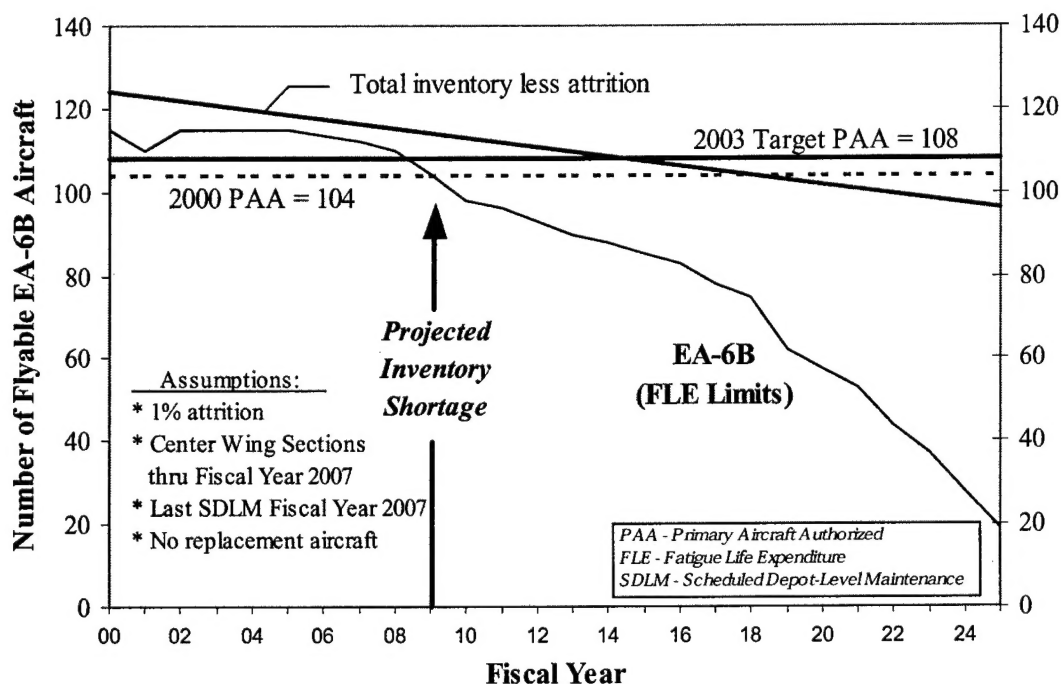


Figure-2 EA-6B Flyable Inventory Situation

IV. STUDY CHARTER

- A. The Deputy Secretary of Defense in Program Decision Memorandum 1 (16 Aug 99) initiated this study, appointed the Navy as the executive lead, and directed participation from all Services, JCS and OSD. In October 1999, the Services, JCS, and OSD established a 13-member Executive Steering Group (ESG), which actively participated in the development of the study guidance and study plan.
- B. The study plan was submitted on 15 Dec 99 to the Under Secretary of Defense for Acquisition, Technology and Logistics, who subsequently issued the study guidance and approved the plan. The Services' Vice-Chiefs each provided Operational Assumptions for the future employment of AEA for the study.
- C. The Study Guidance, Study Plan, along with Services' Operational Assumptions and Vignettes, all supported by study findings, drove the requirement for the study to provide complete and comprehensive sets of AEA alternative solutions.

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V. STUDY TEAM ORGANIZATION

- A. To accomplish this task, study teams were formed using Integrated Product Team (IPT) principles. Senior-level oversight was provided through an ESG, co-chaired by DASN (AIR) and N780, with DoD-wide flag-level representation. An independent Study Director and Study Manager directed the daily activities of five DoD-wide Working IPTs (WIPTs). The five WIPTs addressed user requirements, threat, technical, modeling and simulation, and cost issues.

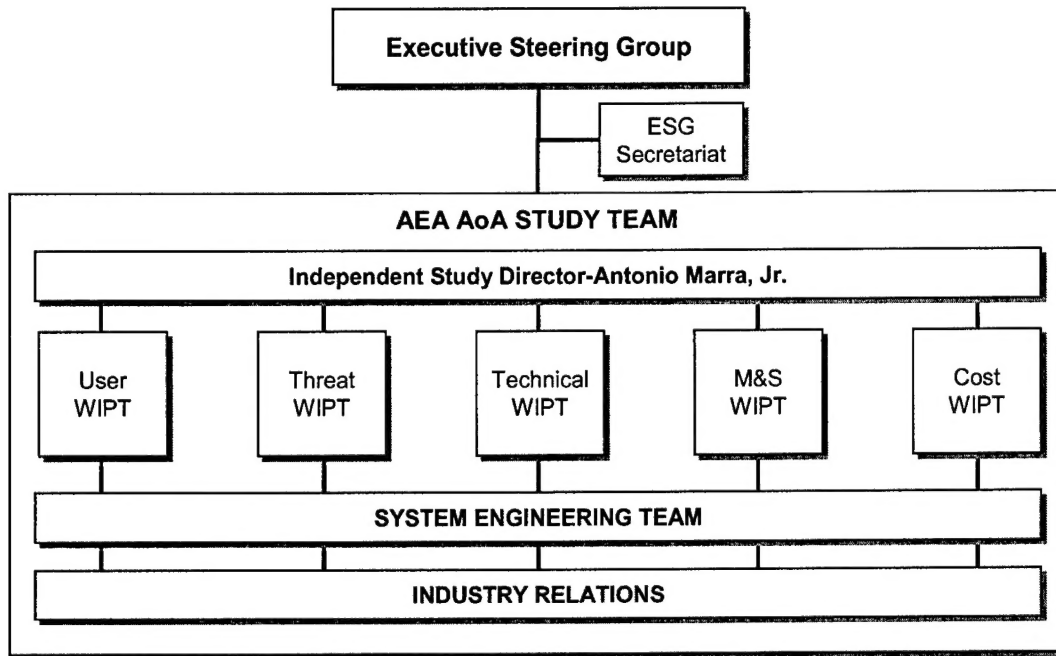
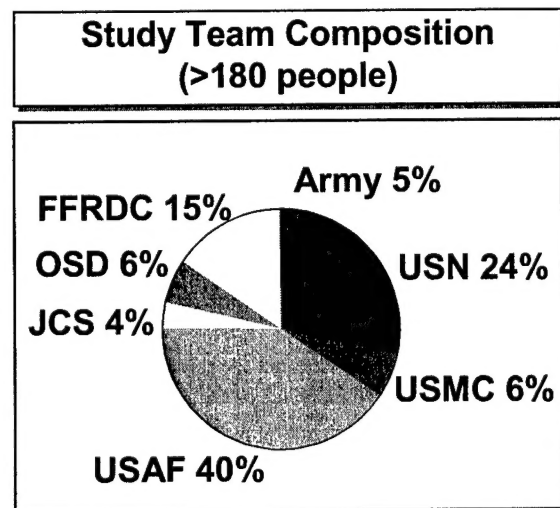


Figure-3 AEA AoA Study Team Organization

- Study Team comprised of 125 government & contractor organizations
- Study Team directly interacted with over 150 industry organizations
- 43 active duty military planners of all services supported study development
- Intelligence community produced 23 publications in support of AEA AoA
- Air Force ASC/ENMM and Johns Hopkins University Applied Physics Lab served as focal point of Modeling and Simulation activity that included over 70 USAF, USN, and USMC persons



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<u>Co-Chairs</u>		
USN <u>DASN (Air)</u> Mr Stussie	USN <u>N780</u> RADM Chanik RADM Robb	
<u>Requirements</u>	<u>Acquisition</u>	<u>Test/Other</u>
<u>USAF - AF/XOR</u> Major Gen Leaf Lt Gen Carlson	<u>USAF - SAF/AOP</u> Brig Gen Corley Maj Gen Huot	<u>DOT&E</u> Mr. Daly Mr. Frame
<u>USMC - ADC/AVN</u> BGen Amos BGen Gardner	<u>USN - PEO(T)</u> RADM Godwin RADM Cook	<u>USN - NO91</u> Mr. Ryan
<u>USA - ODCSOPS</u> BG Peterson BG Hackett	<u>OUSD (AT&L) EW</u> Mr. Grieco	<u>JCS - J39</u> Brig Gen Catton Brig Gen Gratton Brig Gen Wright
<u>JCS - J8</u> BG Freakley BG Batiste	(BOLD indicates current member)	<u>OSD (PA&E)</u> Mr. Johnson Dr. Gilmore

Figure-4 AEA AoA Executive Steering Group Members